<u>REMARKS</u>

I.   <u>Introduction</u>

Claims 1-8, 11, 12, 15-22, and 25-48 were pending in the present application. Claims 4, 15, 28, and 36 have been canceled. In a January 4, 2006, Office Action (herein "Office Action"), Claims 1-3, 8, 11, 12, 15, 16, 25-29, 32-37, and 40 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,948,061, to Merriman et al. (herein "Merriman"). Claims 4-7, 17-22, 30, 31, 38, 39, and 41-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Merriman in view of U.S. Patent No. 5,937,392, to Alberts (herein "Alberts").

II.   <u>Prior Art Rejections</u>

1.   Introduction

Claims 1-3, 8, 11, 12, 15, 16, 25-29, 32-37, and 40 were rejected under 35 U.S.C. § 102(b) as being anticipated by Merriman. Claims 4-7, 17-22, 30, 31, 38, 39, and 41-48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Merriman in view of Alberts. For the following reasons, applicants respectfully submit that Claims 1-3, 5-8, 11-12, 16-22, 25-27, 29-35, and 37-48 are not anticipated by Merriman and are not obvious over Merriman in view of Alberts because Merriman and Alberts, either alone or in combination, fail to teach or suggest calculating a dynamic rotation frequency that is based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities. Merriman and Alberts also fail to teach or suggest dynamically adjusting a rotation frequency as a function of the number of actual display opportunities. Further, Merriman and Alberts fail to teach or suggest a dynamic array for tracking media delivery opportunities wherein array elements of the array initially include estimated delivery opportunities and are subsequently updated to include actual delivery opportunities. Still further,

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Merriman and Alberts fail to teach or suggest updating the remaining array elements containing estimated delivery opportunities based upon the actual page views.

Prior to discussing more detailed reasons why applicants believe that all of the claims of the present application, as amended, are allowable over the cited references, a brief description of the present invention and the cited references is presented.

a.   Summary of the Present Invention

The present invention is generally related to a system and method for dynamically managing the delivery of media, such as advertisement media. More particularly, the present application dynamically selects advertisement media to deliver by calculating a rotation frequency for several items of media. The rotation frequencies are used to calculate an advertisement priority score for each item of media. The priority score is used to select advertisement media to deliver.

In one example of the present invention, the rotation frequency may be defined in terms of the quotient between an impression goal and the number of advertisement media display opportunities (i.e., page views) encountered during an advertisement delivery campaign. The page views may be a predicted number or a combination of both a predicted number and actual page views that have occurred during the advertisement delivery campaign. For example, assume a media campaign has an impression goal of 1,000 impressions over a campaign of 28 days. At the beginning of the campaign, embodiments of the present invention may predict the number of page views for the days to be 1,125. Based on that prediction and the impression goal of 1,000, the rotation frequency may be calculated (1000/1125 = 0.8888889).

Using that rotation frequency, embodiments of the present invention utilize a dynamic array to manage the actual number of page views and adjust the predicted number based on the actual number to assure that the advertisement media is being delivered as desired. In particular,

the dynamic array includes several array elements, each element representing a fixed period of time of the advertisement campaign. At the beginning of the advertisement campaign, each array element contains an estimated number of page views that are predicted to occur during that fixed period of time. As the campaign progresses, the estimates are replaced with the actual number of page views that occurred. Based on the actual page views, the array is dynamically adjusted to compensate for the over/under estimation from portions of the campaign that have been completed.

If there was an underestimation (i.e., more actual page views have been encountered than estimated), the dynamic array is adjusted, the dynamic rotation frequency recalculated, and based on the lower rotation frequency, the priority of the media decreases. Decreasing the priority allows other advertisements to obtain a higher priority score and be delivered as needed. Likewise, if there was an overestimation (i.e., fewer actual page views were encountered than estimated), the dynamic array is adjusted, the dynamic rotation frequency recalculated, and based on the higher rotation frequency, the priority of the advertisement media increases. Increasing the priority ensures that the media is delivered more frequently.

Numerous advantages may be realized by the system or method recited in the claims of the present application. In one aspect, advertisement media may be more effectively and efficiently delivered thereby increasing the likelihood that the impression goals for delivery campaigns are realized. In another aspect, dynamic adjustments in the delivery of advertisements provide the ability to compensate for fluctuations in the number of page views encountered. Additional advantages may also be realized within embodiments of the present invention.

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b. U.S. Patent No. 5,948,061, to Merriman et al.

Merriman is purportedly directed toward a method and apparatus for targeting the delivery of advertisements over a network. In accordance with the teachings of Merriman, the method and apparatus attempts to target advertisements based on the user's preferences, how often the user has previously seen the advertisement, and how frequently the advertisement has been viewed. For advertisements that match the user's preferences and for which the user has seen less than a predetermined threshold, a satisfaction index ("SI") is calculated according to the following formula:

$$SI = \frac{n}{N} * \frac{end - start}{now - start}$$

Where:

n: =the number of times the particular advertisement has been viewed by anyone;

N: the number of times the advertisement is to be seen by anyone;

end-start: the total number of days that the advertisement is scheduled to run; and

now-start: the number of days that the advertisement has run to date.

The SI for matching advertisements is compared and the one with the smallest SI is selected.

Merriman fails to teach or suggest calculating a dynamic rotation frequency that is based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities. Still further, Merriman fails to teach or suggest the use of a dynamic array, including dynamic array elements, for tracking media display opportunities. Additionally, Merriman fails to teach or suggest populating the dynamic array elements with estimated page views, updating those array elements with actual

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page views, and adjusting the remaining array elements containing estimates based upon the actual page views.

<h3 style="text-align:center">c.   U.S. Patent No. 5,937,392, to Alberts</h3>

Alberts is purportedly directed toward a banner advertising display system. In accordance with the teachings of Alberts, the system controls the frequency and distribution with which ads are served throughout the day. Each ad is associated with a counter (M) that has a default value. A counter value of zero indicates that the ad is to be served. A pointer cycles through the ads, decrementing each M counter as it goes, until it identifies an ad that has an M counter value of zero. Once an ad is served, its M counter value is reset to its default value. A second counter (D) is also maintained for each ad, and its value is changed each time the associated ad is served, thereby tracking the number of times the ad has been served. A third counter (A) is used to adjust the default value assigned to M when the counter is reset, thereby adjusting the frequency with which the ad will be served.

In addition to, and distinct from, maintaining counters to control the frequency and distribution of serves, Alberts also teaches that the number of hits for a particular service through which ads are served may be predicted based on the past history of that service. By predicting the number of hits to a particular service, the system of Alberts can adjust how often ads are served or what type of ads are served (e.g., paid, free, trial), to that service in response to hits. Additionally, Alberts discusses breaking up the hours in a day based upon frequency of hits to a service to alter the granularity with which hits are monitored.

In particular, Alberts describes that predicting hits is used to accommodate the situation in which the number of hits per day for a service is undersold compared to the estimated and/or actual number of hits. "For example, if a system is typically receiving 500,000 hits per day and only 250,000 hits per day have been sold, the system can insert banners for charitable

organizations, free serves on a trial basis, or public service announcements." (Alberts, Col. 6, lines 27-35.)

Alberts fails to teach or suggest calculating a dynamic rotation frequency that is based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities. Still further, Alberts fails to teach or suggest the use of a dynamic array, including dynamic array elements, for tracking media display opportunities. Additionally, Alberts fails to teach or suggest populating the dynamic array elements with estimated page views, updating those array elements with actual page views, and adjusting the remaining array elements containing estimates based upon the actual page views.

2.   35 U.S.C. § 102(b) Rejection

a.   Claims 1-3, 8, 11, 12, 16, 25-27, 29, 32-35, 37, and 40

As acknowledged in a May 5, 2004, Office Action, "Merriman et al does not teach the use of estimated impressions for starting an ad campaign scheduling frequency." (May 5, 2004 Office Action, p. 7). However, the present Office Action now states, "[a]lthough Merriman et al does not state that his (actual views) * (campaign disclosure) / (elapsed time) = (estimated total campaign views), . . . this is the case." (Office Action, p. 2). For the following reasons, applicants respectfully disagree.

As recited above, Claims 1, 11, 25, and 33 as amended, describe a computer-implemented method and system for managing media delivery that includes a computer that calculates and adjusts a dynamic rotation frequency. In particular, Claims 1, 25, and 33 include the limitations that "the dynamic rotation frequency is <u>based upon a quotient defined by a numerator corresponding to a delivery goal</u> for a corresponding one of the plurality of media <u>and a denominator corresponding to an estimated number of display opportunities to be encountered</u>

during a predetermined period of time" and "in response to outputting, dynamically adjusting the dynamic rotation frequency for the one or more output media, wherein the rotation frequency is dynamically adjusted as a function of the number of actual display opportunities encountered during the predetermined period of time." (Emphasis added.) Similarly, the system of Claim 11 is operable to "calculate a dynamic rotation frequency based upon a quotient defined by a numerator corresponding to a delivery goal for an advertisement media campaign and a denominator corresponding to an estimated number of display opportunities to be encountered during the advertisement media campaign" and to "dynamically adjust the dynamic rotation frequency in response to selecting and delivering one or more advertisement media, wherein the rotation frequency is dynamically adjusted as a function of the number of actual display opportunities encountered during the media delivery campaign." (Emphasis added.) Thus, the dynamic rotation frequency of both Claims 1 and 11 is calculated "based upon a quotient defined by a numerator corresponding to a delivery goal . . . and a denominator corresponding to an estimated number of display opportunities to be encountered."

Applicants respectfully submit that Merriman simply fails to teach or suggest calculating an estimated number of total campaign views/total views desired. As described above, Merriman is limited to teaching a satisfaction index (SI) that tracks the quotient of the number of previously viewed advertisements (n) and the total number of views desired. (Col. 6, lines 29-47). The satisfaction index (SI) thus only tracks a single metric based on historical data, i.e., the measure of ads delivered against a targeted goal. However, the SI, and this Merriman, fails to consider an estimated number of display opportunities to be encountered in its SI calculation.

Claims 1, 11, 25, and 33 specifically recite the calculation and adjustment of a rotation frequency that based, in part, on an estimated number of display opportunities. Merriman et al.

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clearly fails to teach any type of calculation that expressly utilizes an estimated number of display opportunities in a rotation frequency calculation. Additionally, dependent Claims 2-3, 12, 15, 25-32, 34-36, and 40 all depend from independent Claims 1, 11, 25, and 33, respectively. Therefore, applicants respectfully submits that Merriman et al. does not anticipate Claims 1-3, 8, 11, 12, 15, 25-28, 32-36, and 40 and request withdrawal of the § 102(b) rejection.

In regards to Claims 16, 29, and 37, the Office Action states that the "total estimated views is inherently equal to the number of views already seen plus the views estimated for the remaining time." (Office Action, p. 3). Applicants respectfully submit that the total estimated view does not inherently equal the "views already seen" and the "views estimated for the remaining time." The total estimated view "may be based upon previous advertisement campaigns for a particular market segment or may be based upon a default value." (Page 12, lines 16-19). On the other hand, the "views already seen" and the "views estimated for the remaining time" correspond to what does occur and what is predicted to occur, respectively. (Page 13, lines 15-20). Irrespective, it is clear the Merriman et al. fails to teach or suggest the utilization of an estimated number of display opportunities in calculating any type of rotational frequency. Thus, applicant requests withdrawal of the § 102(b) rejection from Claims 16, 29, and 37.

Furthermore, applicants have amended Claims 1, 25, and 33 to include the limitation that "the <u>rotation frequency is dynamically adjusted as a function of the number of actual display opportunities</u> encountered during the predetermined period of time." (Emphasis added.) Similarly, Claim 11 has been amended to include the limitation that "the <u>rotation frequency is dynamically adjusted as a function of the number of actual display opportunities</u> encountered during the media delivery campaign." (Emphasis added.) The Office Action admits that "Merriman does not provide details about how the system is initialized and at what initial rate the

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ads are served when the campaign first starts." (Office Action, p. 3.) Further, the Office Action admits that "Merriman does not teach the use of estimated impressions for starting an ad campaign scheduling frequency." (Office Action, pp. 3-4.) Thus, the Office Action admits that Merriman fails to teach or suggest dynamically adjusting a rotation frequency as a function of the number of actual display opportunities as recited in Claims 1, 11, 25, and 33.

However, the Office Action asserts that Alberts resolves the deficiencies of Merriman:

"Alberts also teaches a computer controlled ad campaign where the server chooses a particular ad frequency. Alberts teaches a system that can predictively model the number of hits (ad opportunities) to control the distribution of ads. Alberts uses recurring patterns, historical statistics and current statistics to provide control of ad distribution/impressions ... Both Merriman and Alberts use current statistics to further dynamically change the distribution schedule. Merriman teaches the use of estimated ad opportunities left."

(Office Action p. 4). Thus, the Office Action asserts that it would have been obvious to one of ordinary skill in the art "to have used the historically-based predictions of Alberts to initiate the system of Merriman so that the initial ad frequencies are given a balanced start (not too fast or too slow)." (Id.) However, as will be discussed below, Alberts clearly fails to teach or suggest dynamically adjusting a rotation frequency as a function of the number of actual display opportunities.

Although Alberts does describe a "frequency column 40," the frequency column "indicates a number of times an object is to be seen during a specified time period, preferably one day." (Col. 3, lines 44-46; FIG. 3.) As examples, Alberts describes ads in which the "most frequently displayed ad has 100,000 hits per day, another ad is to be served with 50,000 hits per day, and another with 5,000 hits per day." (Col. 5, lines 14-18.) Alberts further teaches that "the frequency with which hits are calculated can be varied from number of hits per day to number of hits per time periods." (Col. 6, lines 48-50.) However, the time periods are varied "based on recurring patterns, such as when most people work, the time zones, and the day of the week."

Thus, Alberts clearly fails to teach or suggest dynamically adjusting a rotation frequency as a function of the number of actual display opportunities.

Claims 1, 11, 25, and 33 specifically recite that a rotation frequency is dynamically adjusted as a function of the number of actual display opportunities. Merriman and Alberts, alone or in combination, clearly fail to teach or suggest dynamically adjusting a rotation frequency as a function of the number of actual display opportunities. Additionally, dependent Claims 2-3, 5-8, 12, 16-18, 26-27, 29-32, 34-35, and 37-40 all depend from independent Claims 1, 11, 25, and 33. Therefore, applicants respectfully submit that Merriman and Alberts, alone or in combination, fail to teach or suggest Claims 1-3, 5-8, 11-12, 16-18, 25-27, 29-35, and 37-40 and request allowance of the claims.

> 3.   35 U.S.C. § 103(a) Rejection

> >   a.   Claims 5-7, 17-22, 30, 31, 38, 39, and 41-48

The Office Action asserts that Alberts resolves the deficiencies of Merriman by describing a system that "can predictively model the number of hits (ad opportunities) to control the distribution of ads." (Office Action, p.4). Therefore, the Office Action asserts that the combination of Merriman and Alberts would have been obvious to one of ordinary skill at the time of the invention to have used predictions to initiate the system of Merriman so that the initial ad frequencies are given a balanced start. (Office Action, p.4).

Alberts, like Merriman, does not describe a method or system wherein the dynamic rotation frequency is computed "based upon a quotient defined by a numerator corresponding to a delivery goal . . . and a denominator corresponding to an estimated number of display opportunities to be encountered." Albert describes (1) controlling the frequency of distribution of server ads with respect to each other; and (2) controlling the distribution of ads through a

particular service by predicting the number of hits for the particular service based on past history of the service.

In Alberts, the frequency of distribution of ads with respect to each other is controlled by maintaining counters to track when and how often ads have actually been served. To obtain efficient distribution of the ads relative to each other and throughout the day (referred to here as "rotation control"), each ad is preferably associated with at least two counters that are operated such that the system can quickly determine which ad is to be served, without intensive computational overhead. (Alberts, Col. 1, line 66-Col. 2, line 4). Alberts continues by describing that the counters are all based on actual usage of the ads. (See Alberts, Col. 4, line 55-Col. 5, line 18). There is no discussion or suggestion in Alberts of the counters being estimates of the frequency of delivery of ads.

The distribution of ads through a particular service, as described in Alberts, may be accomplished by predicting the number of hits for a particular service based on prior experience. (See Alberts, Col. 6, lines 43-46.) Alberts describes that predicting hits for a particular service is desirable to enable the ability to "delay serving all paid ads or all ads of a particular type, and then only serve ads used to [sic] fill in gaps between the total number of hits and the number of paid hits. This way there may be some gaps, but the distribution is made more regular throughout the day." (Alberts, Col. 6, lines 60-65.) The prediction techniques described in Alberts are directed toward controlling the distribution of ads to a particular service, not controlling the distribution of ads themselves. Thus, there is no discussion in Alberts of computing a rotation frequency for media (e.g., ads) that is based upon an estimated number of display opportunities for the media. Alberts is limited to estimating the number of hits that are expected for a particular service and distributing ads (paid, trial, free) to that service based on the predicted number of hits.

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The Office Action also asserts that Alberts teaches "recurring patterns, historical statistics and current statistics to provide control of ad distribution/impressions." (Office Action, p.4.) Although Alberts does describe, on a high-level, building a "model of traffic based on past traffic data" and using "current statistics collected from the ad servers to make new 'meta' tables," the data contained in the 'meta' tables, as well as the statistics collected from the ad servers, do not include estimated or actual display opportunities. (Col. 6, line 66-Col. 7, line 6.) Instead, Alberts teaches that the 'meta' tables contain "the content of ad objects, ratios of serves, counters for rotation, and the number of serves per ad." (Col. 3, lines 64-67.) Alberts further teaches that the "statistics" collected from the ad servers "indicate what ads have actually been served and how often these ads have been served." (Col. 4, lines 4-6.) Thus, Alberts clearly teaches that the 'meta' tables are re-built using "current statistics" which correspond to the number of times an ad has been served. Further, Alberts teaches that ads are served in ratios, such that if there are three display opportunities, a first ad may be served twice while a second ad is only served once. (Col. 5, lines 39-51.) Thus, Alberts clearly fails to teach or suggest populating dynamic array elements with an estimated number of display opportunities and updating those array elements with an actual number of display opportunities, as recited in Claims 19, 41, and 45.

Applicants assert that the limitations of calculating a dynamic rotation frequency based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities to be encountered and dynamically replacing an estimated number of display opportunities with an actual number of display opportunities is not disclosed in Alberts. Alberts is limited to controlling the distribution of ads based on actual serves of the ads themselves (via counters) and maintaining the distribution of ads to a particular service based upon the predicted hits to the service.

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Generally described, under 35 U.S.C. § 103(a), a *prima facie* case of obviousness can be established only if the cited references, alone or in combination, teach each and every element recited in the claim. *In re Bell*, 991 F2d 781 (Fed. Cir. 1993). Merriman and Alberts, alone or in combination, fail to teach or suggest (1) calculating a dynamic rotation frequency based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities to be encountered; or (2) dynamically replacing an estimated number of display opportunities with an actual number of display opportunities. For the above reason, applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of Claims Claims 5-7, 17-22, 30, 31, 38, 39, and 41-48, and assert that Claims Claims 5-7, 17-22, 30, 31, 38, 39, and 41-48 are patentable under 35 U.S.C. § 103(a) over the combination of Merriman and Alberts.
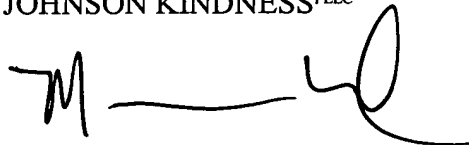
CONCLUSION

Based on the above-referenced arguments and amendments, applicants respectfully submit that all pending claims of the present application are patentable and allowable over the cited and applied references. Because the cited and applied references fail to teach or suggest: (1) calculating a dynamic rotation frequency that is based upon a quotient defined by a numerator corresponding to a delivery goal and a denominator corresponding to an estimated number of display opportunities; (2) that the rotation frequency is dynamically adjusted as a function of the number of actual display opportunities encountered; (3) the use of a dynamic array, including dynamic array elements, for tracking media display opportunities; and (3) populating the dynamic array elements with estimated page views, updating those array elements with actual page views, and adjusting the remaining array elements containing estimates based upon the actual page views, applicants respectfully request withdrawal of the rejections of the claims and allowance of the present application.

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If any questions remain, applicants request that the Examiner contact the undersigned at the telephone number listed below.

Respectfully submitted,

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